

Chapter 2

Culture, Geography, Wealth in Natural Resources, and Technology: Ingredients That Could Make Latin America More Developed and Innovative

Since Max Weber (1930), we have heard that culture weighs, determines, inclines, and ends by deciding which nations will prosper and which are condemned to live in poverty, as long as their people do not change their habit, beliefs, and values. Weber said that the protestant ethic was responsible for the fact that Germany and Switzerland were more successful economically in the twentieth century than the Catholic countries of Spain and Portugal.

More recently, Lawrence Harrison (2000) placed the values and attitudes of the people as the main reasons for these phenomena such as the persistent instability and inequality of Latin America.

The theme “cultural diversity” has attracted considerable attention throughout recent years. This is because the global market covers many hundreds of countries and many different cultures. And the large international companies perceive that to operate efficiently in different countries it is necessary to recognize that it could be necessary to operate in a different manner in each of them.

David Landes (1998, p 13), already cited in the previous chapter, also a respected specialist in economic history, said that if there is something for us to learn about economic development of the nations, it is that culture makes a difference. It is undeniable that history and geography have an enormous role about the culture of a people. In turn, culture and consequently the uses and customs have an effect in the economy and therefore cannot be modified by decree or governmental policies; and need to be studied more deeply.

In this chapter, the focus will be Latin America where almost all the models and ways of economic development have already been or are being tried and tested, by the way, without any great success standing out.

Myrdal (1968, p 104) had already said more than 40 years ago when he studied the Asian economies and concluded that cultural factors profoundly influenced by religion were the main obstacles against modernization in that part of the world.

This chapter intends to focus on these aspects which we call cultural. We will focus on the capacity to manage companies well. Fairbanks and Lindsay (2000, p 112) emphasized that culture is a vital component to define the capacity of a nation to

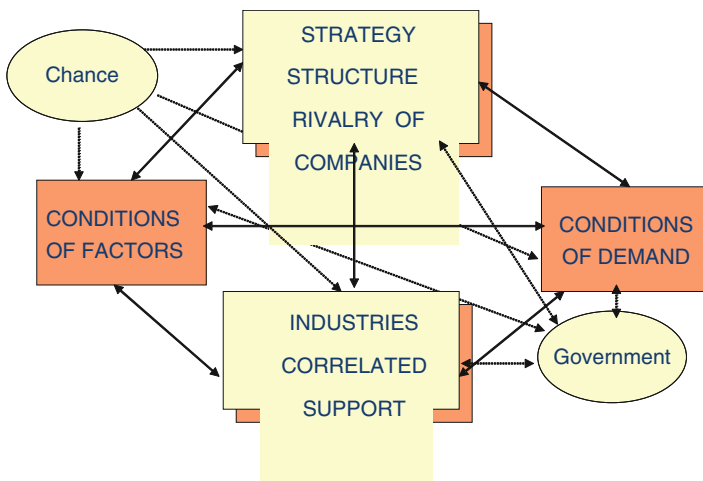
prosper because it formats that which the individuals think about taking risks, rewards, opportunities, and, consequently, progress. In this chapter, our objective is to evaluate how the capacity to manage institutions and companies, public or private, is affected by cultural factors and why this ends up having an enormous impact on the degree of economic development of the respective countries.

An interesting model was developed by Geert Hofstede (1980) who did a scale study with the employees of IBM. Hofstede identified in his study that there are cultural dimensions in work-related values and that these same vary significantly from one country to another.

Michael Porter (1993) is probably the author that has written the most about the importance of microeconomic factors in growth and prosperity of nations. One of his central theses is that developed nations are those that can generate powerful global companies and that therefore the core of the question of economic development is in discovering if the economic environment of each country favors the appearance of this type of company.

One of Porter's most important findings refers to the importance of local and regional factors for development. "Ironically, in today's global economy there are local aspects that have grown in importance and are more decisive in determining which company will be more productive and more competitive than its competitors in other regions of the globe," Porter said.

According to him, the sophistication with which the company competes in the global market is strongly influenced by the business environment existing in the country of origin. Porter emphasizes that the prosperity of nations depends on the improvements of the microeconomic fundamentals of competition and this is intimately related with factors that are strictly local such as the existence of clusters, the type of demand that exists on the part of the consumers, the degree of rivalry among the companies, the strategies adopted by these same as well as aspects that are very regional such as natural resources and know-how, and the qualifications in human resources. His model is represented graphically in the following manner:



Each of the four rectangles is called a determinant. Government and chance are always a part of the environment and can just as much help as they can get in the way. But for Porter, the important thing for success of a determinate sector of the economy of a given country is that the four determinants create the conditions favorable to this success. More important, Porter concluded through his study of more than 100 sectors in 15 different countries that a sector will not be successful if they cannot count on a favorable situation in the four determinants. The definition of each of the four determinants is the following:

2.1 Factor Conditions

This has to do with the natural resources that the geography of the country has. But it also refers to the presence of infrastructure, advanced and specialized human resources, and other factors of production necessary to the industry. Porter emphasizes that the resources perfected by man in this case are more important than those derived from nature as these can be found in many places on Earth. A good example is the large number of highly specialized engineers that Japan began to have beginning in the years 1950–1960. This is because of the success obtained by the company in the electronic sector in computers or automobiles. Because of the abundant natural resources, this is, without a doubt, the determinant that most interferes in the successful economic sectors in Latin America. As we will see further on in the book most of the large Latin American countries have had international projection in the background, there is the use of privileged natural resources as is the case with Vale, in Brazil, or CEMEX, in Mexico.

2.2 Demand Conditions

This refers to a sophisticated consumer base that demands the latest innovations and the highest standard of quality. Porter insists that what is important for a country is to have consumers that anticipate the global demand so that local producers can anticipate that of other countries. The passion of Germans for cars and speed has much to do with the large number of successful international automobile companies that are German, for example, Mercedes-Benz, Volkswagen, Audi, Porsche, BMW, etc.

2.3 Correlated and Support Industries

This is a powerful group of local suppliers and distributors that end up contributing with the process of innovation and facilitating the skills and qualities already existent in a determinate sector. Not any sector can develop if there are no other close sectors

that support them or facilitate the access to input and the flow of their products. The shoe industry in Italy is a good example as it owes much of its world success to the producers of leather, tanners, machine manufacturers for leather and shoes, and even computer designers that conceive of new models.

2.4 Strategy, Structure, and Rivalry

Of the four determinants, according to Porter, this is the most important. Rivalry means the degree of competition that exists among the companies of a given sector in a determinate country. The greater this rivalry is, the better the chance to be successful globally. Among other reasons is that intense rivalry is the greatest motivator for the appearance of innovations and investment in technology. Numerous examples abound, but to highlight only one, we could speak about PCs in the United States where the intense rivalry between Dell and HP and others ended up promoting the technological advance of all. Besides the question of rivalry, Porter believes that in this determinant the structures and strategies are used by the companies to compete. In other words, it is here that Porter deals with the question of corporate management and takes away one of the most important conclusions of his book: National circumstances affect the way in which companies are managed.

Porter upon examining economic sectors in various countries concluded that there is not an administrative system that can be universally applied, as the successful sectors in each country are those where the administrative practices and the organization are adjusted and appropriate for the competitive vantage points of that sector. Among the numerous examples that Porter analyzes to prove his theses is the fact that in Italy economic sectors with a predominance of small companies, such as clothing, furniture, and tiles, tend to be successful at the international level because the small company has everything to do with the way the Italians like to administer their businesses and relate with their families, which in fact, many times, they do simultaneously. In Germany technical graduation in engineering is so intense and common that a good part of company executives are engineers. This makes it such that in this country there is a greater emphasis in the search for improved processes, production methods, and products. In this way, Germany ends up having successful sectors when the high content of engineering is important for the manufacturing of products, as is the case of the optical industry and of chemistry or the manufacturing of heavy machinery or precision machinery. When he speaks of the United States, one of the aspects most outstanding by Porter is the competition and the intense rivalry existent in that country. According to him, this intense competition ends up with the companies equally pressuring one another for the progress of all. The very North American laws, such as the antitrust laws, reflect a national consensus in favor of competition.

More recently, Porter began to study the relation between technological and geographic conditions. In 2001, he wrote, together with Scott Stern, an article which has already become a classic about this subject published in the Sloan Management

Review called “Innovation: Location Matters.” In this article, Porter and Stern criticize the emphasis that has normally been given to the discussion with respect to the internal environment of the companies as a predominant factor for the appearance of technological innovations. According to them, “...*the external environment is, at the least, just as important as the internal one for innovation....*” They continue by saying that the geographic location is crucial for innovation and that corporate management of the innovations has to be done in accordance with the region where the company is installed. According to Stern and Porter, the fertility of the geographic location in terms of innovation also varies significantly according to the sector of activity, and they exemplify: The United States offered an environment particularly attractive for innovation in pharmaceutical products in the 1990s, at the same time that Sweden and Finland achieved extraordinary indices of innovation in the area of wireless telephones.

Peter Dicken (1998) when calling attention to the importance of geography and space in technological innovation highlights what the local aspects are that should be taken into consideration “...*geography plays a fundamental role in the process of innovation and knowledge, to the degree that the innovations are, for the most part, less a result of the individual companies and more of a group of resources, knowledge and other inputs and capacities that are located in specific places. The union of these inputs such as research & development of the universities and the companies, the agglomeration of manufacturing companies in related sectors, and network service providers end up creating scale economies, facilitating the sharing of knowledge, and crossed fertilization of ideas promoting face-to-face interactions which also end up permitting the true transference of technology....*”

The analysis of the relation between technological change and economic development is not a new topic either, having had been one of the main themes of J. Schumpeter, one of the greatest economists at the beginning of the twentieth century according to that which had already been mentioned previously in this text. For Schumpeter (1943), the economy is normally in a state of balance in its capital flows, but the entrepreneurial activity and innovation alter this tendency creating temporary monopolies and generating wealth. After some time, as a result of innovation becoming mature and other competitors entering the market, this balance then begins to turn, and consequently, there appears a new innovation accompanied by an entrepreneur, which would then cause a creative destruction, changing the existing economic order. In other words, according to Schumpeter, the innovations have the power to alter the existing balance in sectors and even destroy them totally to put something else in its place. For Schumpeter (1943), innovation is not simply the accumulation of knowledge “but taking advantage of this accumulation to introduce into the market, with economic success, a new product or process.” There is no doubt that Schumpeter still remains very current. Schumpeter was, without a doubt, one of the pioneers. More than 70 years ago, he argued that economy was characterized by a process of creative destruction. Therefore, an innovative entrepreneur, thanks to a new product or a change in the manufacturing process, could pass in front of his competitors in a determinate market. Nonetheless, this dominant position would be outdone, sometime later, by another entrepreneur holder of a new

Table 2.1 Kondratiev/Schumpeter waves

Wave	First	Second	Third	Fourth	Fifth
Period	1770/1840	1840/1890	1890/1930	1930/1980	1980 (on going)
Description	Early machinery	Steam engines/ railway	Electricity	Fordist mass production	Information technology
Key factor	Cotton and iron	Coal and transport	Steel	Oil and cars	PC, cell phones, and the Internet
Beneficiary indus- tries	Textiles and its equipment	Shipping and railway equipment	Engineer and heavy equipment	Automotive aerospace energy/oil	Computer, telecom, software
Geographic focus	Britain, France, Belgium	Germany, the United States, Britain, France	Germany, the United States, France, Holland, Switzerland	Germany, the United States, France, Japan, Sweden, Canada	Japan, Korea, the United States, China, the United Kingdom, France, Germany

innovative technology or a product or processes. For the first time, an economist emphasized the importance of innovations.

Also dating back to the beginning of the twentieth century are the analyses of the Russian economist Kondratiev. As is known, Kondratiev (1925) was responsible for the concept that economic growth occurred in waves, where each one lasted for approximately 50 or 60 years. Each one of these waves is associated with some important technological change. There have already been four waves, and we are now in the middle of the fifth as can be seen in Table 2.1. Kondratiev said that the technological change that characterizes each wave has an enormous impact over all the economy and society during the time of its activity. Each wave, according to him, will have four subphases: (1) prosperity with growth, (2) recession, (3) depression, and (4) decadence with substitution for a new wave. This being the case, initially a new wave will provoke great economic growth and enormous changes in society, including the breaking of paradigms and cultural changes. However, at the end of the period, demand will begin to fall, as well as there being saturation due to the large number of companies competing among themselves. In this moment, investments will also fall, companies will concentrate on rationalization, and unemployment will increase. This is when the next wave begins to appear on the basis of some new revolutionary technology. Table 2.1—“*The 5 Kondratiev waves*”—shows the principal characteristics of the four prior waves and the one we are in the middle of now, the fifth, which is still the wave of information technology.

The last line of Table 2.1 shows jointly which countries have done better in each of the five waves. Dicken (1998) analyzing the cycles of Kondratiev, emphasizes that in each of the phases, a given technological change predominated and this permitted that some nations had grown more greatly than others, concluding, thus, that this factor alone would be enough to make the question of geography better understood in the sense of trying to understand how technological innovations appear. Dicken emphasizes the question because technological innovations are very frequent in

some regions and scarce or nonexistent in other geographic locations. According to him, there exists a direct relation between geographic conditions and the appearance of technological innovations. This will be proven in Table 7.2 which can be found on page 79 in Chap. 7.

At the end of the 1950s, Robert Solow (1957) analyzed the economic growth of the United States and observed that the same could not be explained only by the growth of capital, the use of raw material, or the growth of available labor. Solow observed that at least one-third of the annual growth of income per capita is derived from other factors but not these. He induced that the explanation could only be due to knowledge and technological innovation. His theory was known as Solow's residual. For this discovery, he received the 1987 Nobel Prize for Economics. Later Solow's theory became more evident than the classic advantages such as low salaries, abundant raw material, cheap capital, or internal markets completely annulled by global competition. And today this competition is beaten by countries and respective companies that are able to stand out. There are no tools better to beat this competition than innovation and technology.

The importance of the effect of technology in the performance and competitiveness of the companies is undeniable: Today new products, new processes, or new forms of doing business give the companies the possibility to compensate for their scarce or weak points. And these new products are obtained through innovation and the innovative use of technology. In other words, for the companies, it is also true what Solow said about countries: Technology greatly diminishes the importance of old factors of production once considered fundamental.

Another Nobel of economy, in the year 2000, Joseph Stiglitz, said that in the past many forecasts by very important economists failed because they said that the economy would stop growing or that it would grow less than the increase of the population. And they always failed, according to Stiglitz, because they did not consider technological advance. Some few economists had spoken with respect to the importance of technology and innovation in economic growth, but they rarely spoke about the importance of knowledge. Paul Romer of Stanford is the most outstanding. Romer is the author of "The New Theory of Growth" which basically sustains how technological innovations and knowledge that are the principal motors of the economy, government, and society can stimulate growth more efficiently through investment in education; according to Romer, knowledge affects work productivity. Therefore, a worker with less access to knowledge would produce less than a worker with access to modern knowledge. Romer is responsible to have brought the themes of education and culture to economic theory as parameters explicitly determinant in a country's development.

The most evident characteristic of the economy that is based on knowledge is not simply that it produces much information for the consumers—even though it does this also—but that it uses the knowledge in a disseminated way, as input and product in all the economy.

Considering that knowledge is finding different ways to do things, we can say that it always was the main source of economic growth, in the long term from the

agricultural revolution up until today. The difference is that IT—information technology—rushed the change in the direction of an economy based on knowledge, by permitting that a greater amount of information was coded digitally, facilitating through long distances, at a low cost.

According to Porter, the greater the rivalry between companies of a country within a given sector of the economy, the greater the chance for this company to be successful globally. Among other reasons, one is that intense rivalry is the largest motivator for the appearance of new innovations and investments in technology. There are many existing examples, but to highlight only one, we can speak about the PC industry in the United States where the intense rivalry between the manufacturers ended up promoting the technological advance of all at the same time.

Management in Latin America

Threats and Opportunities in the Globalized World

Feldmann, P.

2014, VI, 163 p. 104 illus., 69 illus. in color., Hardcover

ISBN: 978-3-319-04749-2